

AMENDMENTS TO THE CLAIMS

Claims 1-10 (Canceled)

11. (Original) In an apparatus for combusting a fuel and air mixture, the apparatus having a combustion chamber wall defining a combustion chamber, an exhaust flue forming communication between the combustion chamber and an ambient environment, the improvement comprising:

a pressure relief void in communication with the combustion chamber and the ambient environment, and the pressure relief void sized large enough to relieve an ignition pressure from the combustion chamber upon ignition of the fuel and air mixture and sized small enough to prevent a combustion flame from passing through the pressure relief void during at least one of ignition and operational combustion of the fuel and air mixture.

12. (Original) In the apparatus according to Claim 11 wherein the pressure relief void is formed as a peripheral gap between the combustion chamber wall and a vessel wall of a vessel.

13. (Original) In the apparatus according to Claim 12 wherein the peripheral gap is in a range from about 0.055 inch to about 0.065 inch.

14. (Original) In the apparatus according to Claim 12 wherein at least one of the combustion chamber wall and the vessel wall has at least one spacer element that fixes the combustion chamber wall at a distance from the vessel wall.

15. (Original) In the apparatus according to Claim 14 wherein the at least one spacer element comprises at least one of the combustion chamber wall and the vessel wall having a protuberance positioned within the peripheral gap.

16. (Original) In the apparatus according to Claim 11 wherein a first area of the pressure relief void is sized according to a second area of the exhaust flue so that a first flow rate through the pressure relief void is significantly less than a second flow rate through the exhaust flue.

17. (Original) In the apparatus according to Claim 11 further comprising a venturi nozzle forming communication between the combustion chamber and a fuel supply and an air supply.

Express Mail No.: EV413564576US

18. (Original) In the apparatus according to Claim 11 further comprising a plurality of burners mounted to discharge into the combustion chamber.

19. (Original) In the apparatus according to Claim 18 wherein each of the burners has a self-supporting mat structure forming a burner surface.

20. (Original) In the apparatus according to Claim 19 wherein the self-supporting mat structure comprises a plurality of ceramic fibers coated with a silicon carbide material.

21. (Original) In the apparatus according to Claim 20 wherein the ceramic fibers are solidly welded together.

22. (Original) In the apparatus according to Claim 11 wherein the apparatus is a natural draft and non-condensing gaseous fuel fired water heater.

Claims 23-37 (Canceled)